



SCHOOL CULTURE

in Improving Student Achievement in POS

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Over the past five years, the National Research Center for Career and Technical Education (NRCCTE) has sponsored five research studies of Programs of Study (POS)—including three ongoing longitudinal projects—with the goal of informing the field about how and under what conditions POS impact student engagement, achievement, and transition to postsecondary education and employment. POS, mandated under Perkins IV, increase program accountability in the areas of academic achievement, technical skills achievement and alignment with postsecondary education.

Our longitudinal study, *Rigorous Tests of Student Outcomes in Career and Technical Education (CTE) Programs of Study*, was designed to estimate the impact of POS on high school students' academic and technical achievement outcomes through the completion of high school. For the past four years, we have followed two

cohorts of students from the Class of 2012 in two large, urban school districts that offer POS.¹ Each year, we collect student outcome data and conduct site visits to treatment and control or comparison schools; we observe academic and CTE classes and interview students, teachers, counselors and administrators in order to get a better sense of the experiences of students attending POS compared to students not attending POS.

At this point in our study, we have acquired and analyzed ninth- and tenth-grade student outcome data (e.g., grade point averages, test scores, technical skills assessments, and other measures) and site visit data. (By the time this issue of *Techniques* appears in print, we will be in the process of analyzing our students' eleventh-grade outcome data, which will not be available until fall-winter 2011-2012.) Our ninth- and tenth-grade results have been published in a series of reports, journal articles and conference presenta-

tions available on the NRCCTE Web site. This article describes our two districts and study schools and summarizes what we have learned about how district and school policies, practices and cultures support the implementation of POS and promote student success in preparing for life after high school.

West District: A Commitment to Cutting-Edge CTE²

Located in a large city in a western state, West District serves an urban-suburban student population, 64 percent of whom self-identify as ethnic minorities, and more than 40 percent of whom are eligible for free lunch. Three POS high schools are participating in our study. *Navy* is a new high school in which CTE and academic programs are housed together in modular units customized by teachers and business community partners. It was designed around the “best practices” principles of learning

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communities, project-based learning (PBL), and the expectation that students will earn postsecondary credits. *Sky*, the district’s 40-year-old former career center, has greatly strengthened its academics. It boasts a strong pass rate on state achievement exams and offers many AP classes alongside its CTE. *Azure*, a magnet high school composed of wall-to-wall academics, offers high-tech CTE like engineering, network, and information technology and has a long-standing reputation as a high-performing school.

During visits to our treatment schools, we found plentiful resources and organizational structures supporting CTE and more specifically POS. West District has a strong commitment to CTE; indeed, its POS schools were designed and created to improve student achievement, promote diversity, and create an awareness of career opportunities related to POS. West’s POS schools offer modern CTE technology and curricula, and provide students with the opportunity to learn all aspects of an industry and earn postsecondary credits while still in high school. All three of our study schools, Navy, Sky, and Azure, use innovative teaching techniques, particularly PBL practices that apply academic and technical content knowledge to career contexts. All three also possess unique school cultures that foster career- and college-readiness.

Navy: Integrated technology, project-based learning and a culture of support. A hallmark of Navy’s POS are modern, industry-grade facilities and the integrated use of instructional

technology. Its culinary and hospitality programs benefit from a full-size banquet hall, industrial kitchens and demonstration classrooms that rival those of the local community college. The culinary program’s course content—including textbooks, instructional videos, podcasts, blogs, assessments, recipes and other resources—are now cloud-based, and teachers interact with students in an online platform that integrates instruction and assessment with social media.

Navy’s POS are structured around PBL, and all teachers receive intensive professional development and support related to implementing PBL in their classrooms. Although all programs engage in class-specific PBL, Navy also sponsors school-wide PBL events that bring students, teachers, parents and community members together around such themes as space exploration and Earth conservation. Navy’s culture supports students and teachers. An advocacy period allows students to receive mentoring and advising from teachers who remain with them throughout high school. Teachers also benefit from the principal’s open-door policy and commitment to supporting curricular innovation and ongoing professional development.

Sky: Familial culture, hands-on learning and professional skills.

One of the district’s oldest high schools, Sky possesses a familial sense of continuity, shared history and communal values that it communicates to new students through customs that encourage them to take pride in the school and their own

accomplishments. Sky’s faculty and staff also actively promote the school as a place of excellence and achievement. The progenitor of the district’s new POS high schools, Sky is currently being rebuilt to incorporate their modern features and equipment.

Sky’s programs emphasize hands-on learning and integrated academic and CTE content. In the health occupations program, for example, teachers bring together biology, chemistry, math and anatomy in the service of understanding the body and its functions—all while allowing students to practice taking blood pressure and performing other medical assessments.

Sky’s curriculum includes a required ninth-grade class that teaches soft skills, career exploration and standards of professional behavior. In class, students prepare resumes and four-year graduation plans and participate in mock interviews (that sometimes lead to job offers) with the school’s business and community partners. Its busy Career Center serves as a model for other district high schools.

Azure: High achievement, self-awareness and targeted counseling. One of West District’s highest achieving high schools, Azure blends academic achievement with high-tech career-themed programs and enriched co-curricular experiences. For example, the school hosts popular career and technical student organizations (CTSOs), like Future Business Leaders of America (FBLA), that supplement classroom learning. A business teacher we interviewed

stressed the importance of FBLA in imparting dress, networking, and written and oral communication skills to students, in addition to providing opportunities for business-related field trips and leadership development activities.

One counselor reported that Azure was full of self-described “nerds.” The students we interviewed proudly concurred, describing their strong focus on schoolwork and goals. One said, “I feel really prepared because of the workload and the different ways that we are learning why we’re doing something. Not just learning the actual topic, but the reasons behind it.”

College and career counseling at Azure is divided between guidance counselors, who address four-year planning and college preparation, and program area teachers, who handle career-related guidance in the classroom. Unique to Azure is a ninth-grade counseling cohort model, instituted by the school’s newest guidance counselor, that seeks to mentor and support freshmen socially and academically with activities related to academic planning, goal setting, study skills, career interest inventories, and use of the state’s online career information system.

East District: Blending Learning with Real-World Career Experiences

Located in a large city on the East Coast, more than 66 percent of East District’s students self-identify as ethnic minorities, and nearly half are eligible for free lunch. CTE in East District is a well-supported high school curricular component. East is located in a state with secondary-postsecondary statewide articulation agreements, assuring students a seamless transition and the opportunity to earn college credit that can be applied to an associate degree or postsecondary certificate program. Local articulation agreements also link the district and the local community college. Our treatment school, Blue Academy, is a state-of-the-art POS high school featuring three academies combining rigorous

academics with programs in engineering, medical sciences and biotechnology, and information technology. Many of Blue’s faculty have had recent industry careers, and its CTE course sequences align with specific academic requirements and tangibly connect to careers in the real world.

Blue Academy: Caring, high expectations, and college and career preparation. Blue’s school culture helps it maintain its focus on academic and technical achievement and the promotion of CTE as a means of attending college. This culture emphasizes caring and collaboration, high expectations, and college and career planning as part of all daily activities. Culture is communicated on multiple fronts using a variety of media, including posters in hallways, mandatory student planners, and closed-circuit monitors in each classroom that deliver a constant stream of interesting facts, school news and inspirational quotes.

Blue’s principal introduced a corporate-inspired philosophy about implementing change through personal responsibility and positive interactions with others, and students appear to buy into this philosophy. High expectations are also visible in the staff’s frequent monitoring of student progress and sponsorship of friendly competitions to spur higher achievement. College-going and career planning are championed at Blue and suffused into classroom activities. The school also offers many college- and career-oriented assemblies and field trips that expose students to postsecondary possibilities and potential employers.

Conclusions

Four years of data collection and site visits to our study schools have shown us that POS offer students rigorous, engaging instruction in academic and technical content areas. This is combined with opportunities to apply their knowledge and skills to the solution of real-world problems, earn college credits, familiarize themselves with careers, and connect

with local businesses and community partners. No less importantly, POS appear to be strengthened by school cultures, organizational structures, and instructional practices that emphasize academic and technical achievement, high expectations and preparation for life after high school. **I**

Endnotes

- 1 To learn more about our study’s design and methods, please refer to our published reports, which are available on the NRCCTE Web site at <http://bit.ly/nmyFnk>.
- 2 The names of all districts and schools are pseudonyms.

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